Magnetic Surface Temperature Sensor HART   METS-WSM

● Characteristics

- Input:	RTD Pt100 (maximum range -50...+200 °C)
- Output:	4...20 mA current loop HART (2-wire)
- Voltage supply:	out of current loop (12...40 VDC)
- Accuracy:	see technical details
- Process connection:	clamping magnet
- Electrical connection:	several plugs
- Temperature range:	-20...+80 °C (ambient)
- Limit value contacts:	2 electronically (NPN / PNP)
- Adjustment:	keys / software
- Material:	stainless steel 1.4571 (medium contact)
- Protection:	at least IP65

● Technical Data

Input

Sensor RTD Pt100:	-50...200 °C (minimum range: 50°C), 4-wire (Higher ranges up to -50...250 °C available on request)

Output

Current signal:	4...20 mA with superimposed communication signal (HART), 2-wire current loop
Current range:	3,8...20,5 mA
Signal on error:	3,6 mA (sensor short circuit, underflow) 21 mA (sensor break, sensor open circuit, overflow)

Performance

Sensor:	RTD Pt100:	Class A / Class B / Class AA (B1/3 DIN)
Measuring amplifier:	Accuracy:	0,3% of range
	Resolution:	16 Bit
	Filter setting:	0...99 s
	Measuring rate:	10 measurements/s
	Configuration:	Keys on display / via software (HART communication)
	Transmission behaviour:	temperature linear
	Turn-on delay time:	<5 s
	Respons time:	20 ms
Indicator / limit values:	Resolution:	-9999...9999 digit
	Error of measurement:	±0,2% of range, ±1 digit
	Temperature drift:	100 ppm/K
	Features, Operation:	according VDMA 24574-1 up to 24574-4

Programmable Features

Measuring amplifier:	Measuring range start (LRV) / Measuring range end (URV) / Adjustment, simulation of output current / Filter function Linear output signal / HART address / 2-point calibration
Display:	range of indication / time of indication / decimal point / units / stabilisation of zero point / locking of programming / calibration points / TAG number
Limit value contacts:	limit value 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2

● Applications

For use in climating, ventilating and heating installations and the whole range of industrial application. With it's two configurable limit value contacts, the integrated display and the numerous electrical connections, the temperature sensor is also suitable for applications with higher requirements.

● Technical Data (Continued)

Indication

Display:	7 segment, 8,5 mm, red, 4 digits, representation mirror-inverted 180° possible
Head of display:	rotatable approx. 330°
Memory:	minimum / maximum values
Indication:	- measuring value - unit of measurement - control menu
Decimal point:	automatically or manually, dependent on measuring range / unit
Representation:	xxxx / xxx.x / xx.xx / x.xxx

Limit Contacts

Electronically:	2x PNP or NPN (30 VDC, 200 mA) Option: 2x PNP or NPN (30 VDC, 1000 mA)
Indication:	1 LED red for each limit value
Voltage across:	<1 V
Settings:	with 3 keys (TouchM-Technology)
Setting range:	switch point and hysteresis: any value within measuring range
Switching delay:	0,0...999,9 s
Failsafe function:	adjustable
Galvanical insulation:	switching outputs are separated from measuring amplifier

Supply

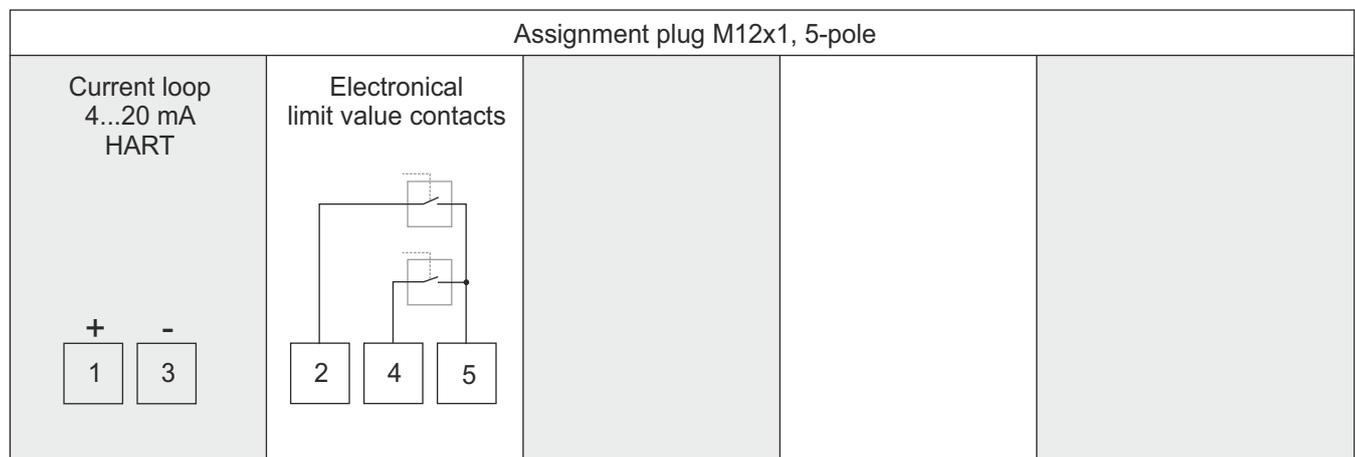|	
Voltage:	HART current loop: 12...40 VDC VDC
Load:	$R = (U_B\text{-}12\ V) / 21\ mA$
Reverse battery protection:	available (no function, no damage)

Environmental Conditions

Temperature:	Operating range: -20...+80 °C **Attention: Temperatures above +85 °C can destroy the electronics.** Medium: -50...+200 °C Storing: -40...+100 °C
Condensation:	uncritical

Mechanics

Dimensions:	see page 3
Process connection:	Clamping magnet
Adhesive force of magnet:	66 N
Electrical connection:	see page 3
Material:	Body: PBT GF30 Display head: polycarbonate (makrolon) Sensor body: stainless steal 1.4571 Magnet: alnico 500
Weight:	approx. 259 g (70 mm, 1/2", M12)
Fitting position:	any
System pressure:	PN 25
Protection of device:	Protection class: at least IP 65 (electronics) PCB: potted

● Connection M12x1-Plug (Example)

Assignment plug M12x1, 5-pole				
Current loop 4...20 mA HART	Electronical limit value contacts			

Current loop: **+** 1, **-** 3
Electronical limit value contacts: 2, 4, 5

● Electrical Connection

M12x1	Super Seal	Deutsch	Deutsch	Bayonet	Valve	MIL	
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	6-pole	

Connection / Limit value (LV)	M12 4-pole	M12 5-pole	M12 8-pole	Bayonet 4-pole	Deutsch 4-pole	Deutsch 3-pole	Super Seal 3-pole	Valve 4-pole	MIL 6-pole	
1 electronical LV	X	X	X	X	X			X	X	
2 electronical LV		X	X						X	

● HART Communication

The HART-Tool is a graphical user interface for the ME series with menu-driven progam for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device. Operating systems: Windows 2000, Windows XP, Windows 7, 8.1 and 10.
Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

Settings: - Adjustment of output current - Simulation of output current - Filter function
            - Limits of measuring range - Linear output signal - HART address
            - 2-point calibration

Please note: When using communication via a HART modem, a comunication resistance of 250 Ω has to be taken into account.

● Dimensions (in mm)

approx. 40

approx. 37

approx. 100

spring stroke

1,5

Ø 6

Ø 36,5
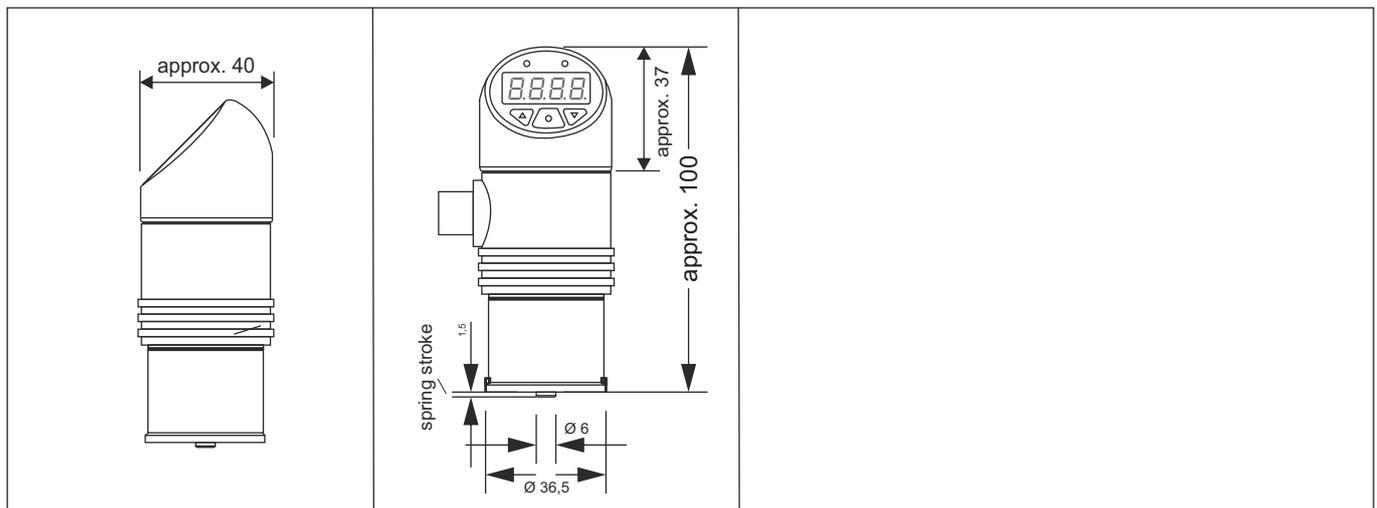
● Ordering Code

N	X	X	X	X	X	X	X	-	X	X	X

Input:	Pt100, 4-wire	0					

Sensor type:	Class A		0				
	Class B		1				
	Class AA (B 1/3 DIN)		3				

Process connection:	Clamping magnet			0			

Limit value contacts:	2x PNP, 30 VDC, 200 mA (Standard)				0		
	1x PNP, 30 VDC, 200 mA				1		
	Without				2		
	2x NPN, 30 VDC, 200 mA				3		
	1x NPN, 30 VDC, 200 mA				4		
	2x PNP, 30 VDC, 1000 mA				5		
	1x PNP, 30 VDC, 1000 mA				6		
	2x NPN, 30 VDC, 1000 mA				7		
	1x NPN, 30 VDC, 1000 mA				8		

Electrical connection:	M12, 4-pole					0	
	M12, 5-pole					1	
	M12, 8-pole					2	
	Deutsch DT04, 3-pole					3	
	Deutsch DT04, 4-pole					4	
	Super Seal 1.5, 3-pole					5	
	Bayonet (DIN), 4-pole					6	
	Valve plug, 4-pole					7	
	MIL, 6-pole					9	

Configuration:	Factory setting[1]						0
	Customized (please specify)[2]						1

Other:	Special model							0

1) Measurement range: -50...200 °C (LRV...URV) / Damping: 0 s
   Pt100, 4-wire / Grenzwerte: 40% - 80%

2) All settings possible according to Technical Data can be selected. For values not selected factory settings
   will be chosen.

Accessories:

HART-Interface, USB, Software   Order.-No.: **01310-00220**